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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,897	04/18/2001	Stephen Allott	20408002000	8333

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EXAMINER

GLENN, KIMBERLY E

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,897

Applicant(s)

ALLOTT, STEPHEN

Examiner

Kimberly E Glenn

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-26 and 32-37 is/are rejected.
- 7) ☒ Claim(s) 27-31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nauta US Patent 5,117,205 in view of Brahmhatt US Patent 4,442,481 (of record).

Nauta discloses a voltage controlled oscillator 7 comprising; a first gm cell G1; a second gm cell G2 having a noninverting input coupled to a noninverting output of the first gm cell, an inverting input coupled to an inverting output of the first gm cell, a noninverting output coupled to an inverting input of the first gm cell, and an inverting output coupled to a noninverting input of the first gm cell; a first capacitance C1 coupled between the noninverting output and inverting output of the first gm cell; a second capacitance C2 coupled between the noninverting output and inverting output of the second gm cell; and a filter 1 comprising a third gm cell, wherein the first, second and third gm cell G3-G9 each comprises a variable resistance. The variable resistance comprises a plurality of MOS devices coupled in series. The gate of the MOS device is configured to receive a control voltage (V_i^+ V_i^-). In argument, applicant argues that MOS transistors are variable resistances. (Figure 1-3 and 5b and column 7, line 40 through column 9, line 47 and column 13, lines 21-47)

Thus, Nauta is shown to teach all the limitation of the claim with the exceptions of the variable resistance comprising a native MOS device

Brahmbhatt teaches that native MOSFETS are art-recognized equivalent to enhancement mode MOSFETS but have a very low threshold voltage that additionally does not require additional doping; therefore, unwanted manufacturing variations are reduced (see col. 9, lines 1 - 20).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have substituted the are recognized equivalent native MOSFETS as taught by Brahmbhatt in place of the generic MOSFETS in the transconductance cell of Nauta figure 2 because such a modification would have been considered a mere substitution of art-recognized equivalent MOSFETS that would have advantageously not required additional doping in an integrated structure.

Claims 22-26 and 32-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nauta US Patent 5,117,205 in view of Brahmbhatt US Patent 4,442,481 (of record) in view of Chen US Patent 5,463,352.

Nauta in combination with Brahmbhatt discloses a voltage controlled oscillator comprising; a first gm cell; a second gm cell having a noninverting input coupled to a noninverting output of the first gm cell, an inverting input coupled to an inverting output of the first gm cell, a noninverting output coupled to an inverting input of the first gm cell, and an inverting output coupled to a noninverting input of the first gm cell; a first capacitance coupled between the noninverting output and inverting output of the first gm cell; a second capacitance coupled between the noninverting output and inverting

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output of the second gm cell; and a filter comprising a third gm cell, wherein the first, second and third gm cell each comprises a variable resistance, the variable resistance comprises native MOS devices. The variable resistance comprises a plurality of native MOS devices coupled in series. The gate of the native MOS device is configured to receive a control voltage. Nauta further teaches a phase locked loop connected to the voltage-controlled oscillator.

Nauta and Brahmabhatt are shown to teach all the limitations of the claim with the exception of the phase locked loop comprising of a reference signal, a phase/ frequency detector, a charge pump, and a loop filter.

Chen discloses in figure 1 a typical phase locked loop comprising of a reference signal, a phase/ frequency detector, a charge pump, and a loop filter.

Therefore, it would have been obvious to substitute the art-recognized equivalent phase locked loop shown in Chen in place of the generic phase locked loop disclosed in figure 2 of Nauta because such a modification would have been considered a mere substitution of art-recognized equivalent phase locked loops.

Response to Arguments

Applicant's arguments filed 11/04/04 have been fully considered but they are not persuasive. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does

not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Allowable Subject Matter

Claims 27-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

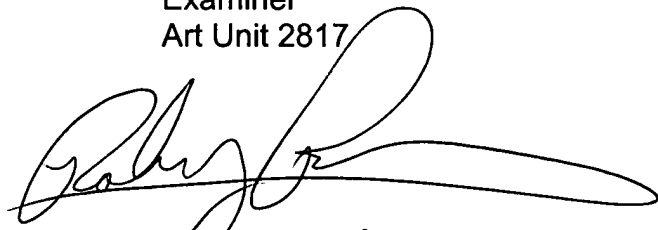
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly E Glenn whose telephone number is (571)-272-1761. The examiner can normally be reached on Monday-Friday 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kimberly E Glenn
Examiner
Art Unit 2817

keg



Robert Pascal
Supervisory Patent Examiner
Technology Center 2800